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# DEPARTMENT OF OCEANOGRAPHY UNIVERSITY OF WASHINGTON

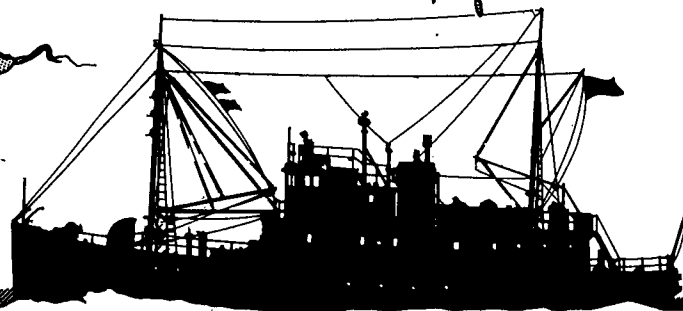
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Technical Report No. 28

PHYSICAL AND CHEMICAL DATA  
FOR PUGET SOUND AND APPROACHES  
February 1949 — February 1952

Office of Naval Research  
Contract N8onr-520/III  
Project NR 083 012

Reference 54-12  
March 1954



SEATTLE 5, WASHINGTON

UNIVERSITY OF WASHINGTON DEPARTMENT OF OCEANOGRAPHY  
(Formerly Oceanographic Laboratories)  
Seattle, Washington

PHYSICAL AND CHEMICAL DATA  
FOR PUGET SOUND AND APPROACHES  
February 1949 - February 1952

by

Clifford A. Barnes and Eugene E. Collias

Technical Report No. 28

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March 1954

*Clifford A. Barnes*  
for Richard H. Fleming  
Executive Officer

## INTRODUCTION

This report contains inshore data collected from January 1949 thru February 1952 by University of Washington personnel aboard the School of Fisheries research vessel ONCORHYNCHUS. Station location charts are presented before the data for each section (see pages 1, 7, 15, 19, 25 and 39). Additional inshore data not contained in this report were obtained with the Salinity-Temperature-Depth Recorder (1) and various current meters.

### Station Numbering System

Stations occupied by the ONCORHYNCHUS are numbered consecutively in a series prefixed by the letter A.

### Sampling Bottles

Water samples were taken with Nansen bottles and enlarged modified  $2\frac{1}{2}$ -liter Knudsen bottles.

### Determination of Properties

Deep-sea reversing thermometers were used to determine temperature. Both Copenhagen standard sea water and a secondary standard were used as references in titration for chlorinity. Dissolved oxygen was determined by the modified Winkler method described by Thompson and Robinson (2). Soluble phosphate was determined by the method described by Thompson and Robinson (3). The phosphate data are reported conventionally to the second decimal place in microgram-atoms per liter, although it is realized that the individual determinations may be in error by 5 to 10 percent. Soluble silicate was determined by the method described by

Thompson and Robinson (4). Nitrite-nitrogen was determined by the method of Thompson and Robinson (5). In all of the nutrient determinations the electric eye photometer (6), rather than Nessler tubes, was used to measure the color intensity. The silicate and nitrite data are presented in the Appendix (pages 43 to 46). The depths reported for sub-surface observations were calculated from measured wire angle and unprotected reversing thermometer readings as described by LaFond (7).

#### Data

The time at which the messenger was dropped on the first cast is listed for the +8 time zone. Positions are given to the nearest 0.1 minute. Depth in fathoms was obtained with the aid of a Bendix Depth Finder Model DR-3. Weather is reported in the Navy bathythermograph weather code given in H. O. Publication No. 606-c, except in cases where the only weather phenomenon reported is the state of the sky. For the state of the sky the following symbols are used: b., clear sky; b.c., blue sky with detached clouds; c., sky mainly cloudy; and o., sky overcast. Wind velocity is reported in knots. Air temperature is reported in degrees Fahrenheit.

All data are actual observed values. The maximum depth of sampling was governed by the depth of water. All clearly questionable data have been excluded.

The presentation of these data in this form does not constitute publication. Subsequent, more rigorous analyses of these data may disclose errors which are not apparent at this time.

## PERSONNEL

### AT SEA

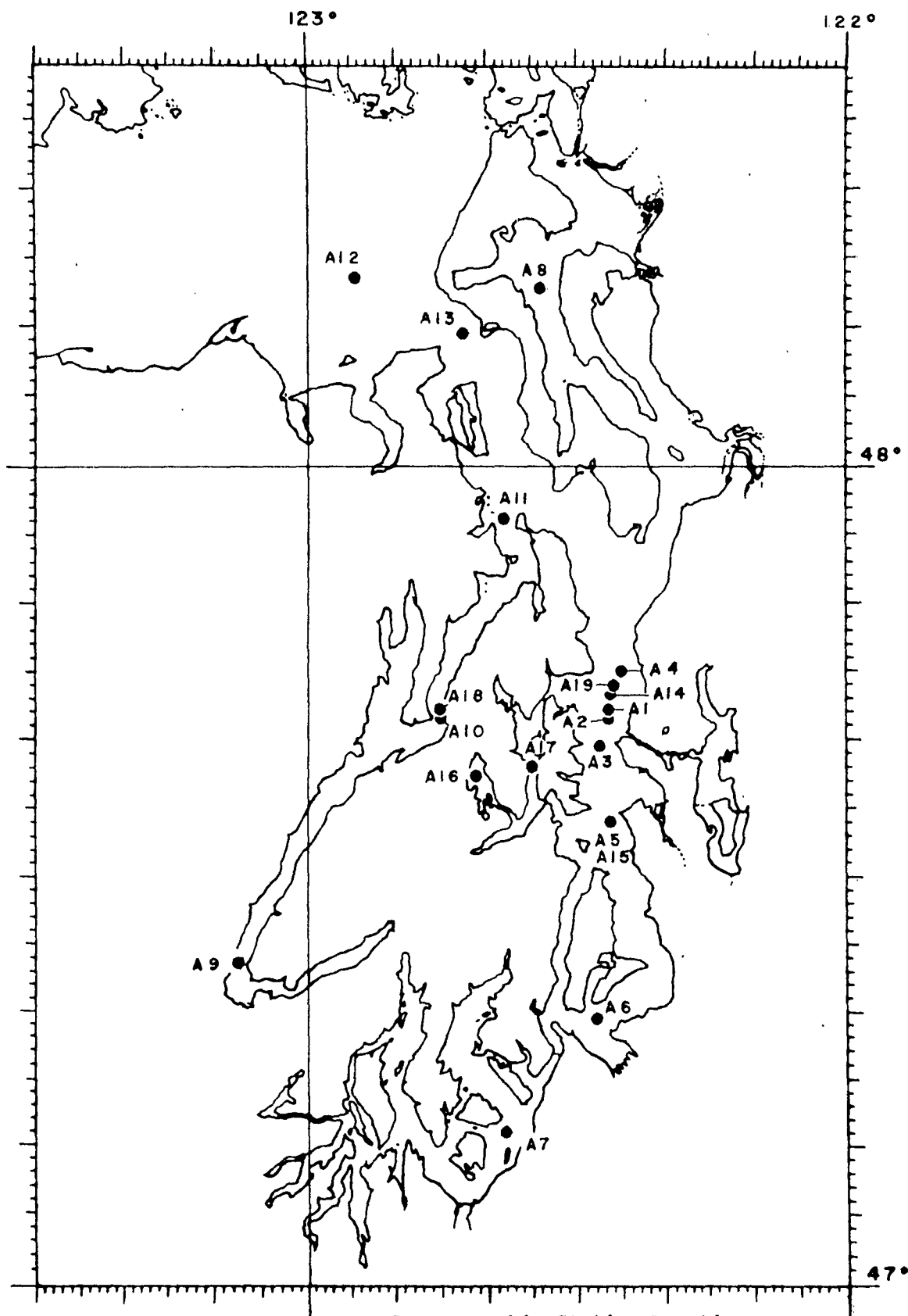
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Kinison, Roberta F.	Secretary
Shimasaki, Dorothy	Laboratory Technician
Symes, George J.	Laboratory Assistant
Waldron, Dorothy R.	Laboratory Technician

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- (1) Jacobsen, A. W.  
1948. An Instrument for Recording Continuously the Salinity, Temperature, and Depth of Sea Water. Trans. Amer. Inst. Elec. Engrs., 67:714-722.
- (2) Thompson, T. G. and R. J. Robinson  
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1948. The Determination of Phosphates in Sea Water. Jour. Mar. Res., 7(1):33-41.
- (4) Thompson, T. G. and R. J. Robinson  
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- (6) Ford, Wm. L.  
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- (7) LaFond, E. C.  
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Oceanographic Station Locations  
 ONCORHYNCHUS Station Nos. A-1 to A-19  
 8 February - 12 May 1949



STA A-1      47° 42.1' N WEATHER 00 8 Feb 49      122° 26.7' W WIND calm 1615 (+8) DEPTH --- fm --° F Shilshole Bay			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	6.38	29.52	0.543
10	6.42	29.79	0.474
20	6.43	-----	-----
30	6.48	29.87	0.522
100	6.53	30.17	0.503
135	6.63	30.28	0.491

STA A-3      47° 39.6' N WEATHER 00 11 Feb 49      122° 27.6' W WIND calm 1345 (+8) DEPTH --- fm --° F West Pt.			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	6.38	29.07	-----
10	6.40	29.72	-----
20	6.49	29.78	-----
30	6.47	29.78	-----
51	6.55	29.97	-----
101	6.57	30.10	-----
136	6.57	30.26	-----

STA A-2      47° 41.6' N WEATHER 00 11 Feb 49      122° 26.5' W WIND calm 1100 (+8) DEPTH --- fm --° F Shilshole Bay			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	6.35	29.63	-----
10	6.48	29.78	-----
20	6.42	29.78	-----
30	6.45	29.78	-----
51	6.43	-----	-----
101	6.50	30.08	-----
136	-----	30.28	-----

STA A-4      47° 44.9' N WEATHER c. 15 Feb 49      122° 25.0' W WIND SE 15 1345 (+8) DEPTH --- fm --° F Pt. Jefferson			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	6.24	29.83	0.551
10	6.23	29.8	0.549
20	6.26	29.96	0.542
30	6.33	29.94	0.521
49	6.31	29.90	0.526
97	6.45	30.16	0.508
130	6.46	30.21	0.519

STA A-5      47° 34.1' N WEATHER 00 28 Feb 49    122° 26.0' W WIND calm 1508 (+8)    DEPTH --- fm --° F Alki Pt.			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	6.64	27.03	0.522
10	6.42	28.93	0.545
20	6.36	29.27	0.554
30	6.31	29.60	0.458
50	6.30	29.69	0.487
100	6.29	30.12	0.500
135	6.36	30.17	0.514

STA A-7      47° 11.2' N WEATHER b.c. 3 Mar 49      122° 38.1' W WIND calm 1737 (+8)    DEPTH --- fm --° F Gordon Pt.			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	6.46	28.44	0.552
10	6.28	28.82	0.549
20	6.32	28.87	0.542
30	6.28	29.00	0.537
50	6.25	29.20	0.511
100	6.32	29.33	0.503
135	6.36	29.42	0.522

STA A-6      47° 19.5' N WEATHER c. 3 Mar 49      122° 28.0' W WIND calm 1416 (+8)    DEPTH --- fm --° F Brown Pt.			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	6.87	25.82	0.588
10	6.49	29.16	0.540
20	6.43	29.29	0.543
30	6.36	29.45	0.527
50	6.32	29.67	0.506
100	6.33	30.16	0.480
135	6.41	30.26	0.492

STA A-8      48° 12.8' N WEATHER 0 16 Mar 49    122° 33.8' W WIND SE 10 1441 (+8)    DEPTH --- fm --° F Snatelum Pt.			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	7.84	23.35	0.763
9	6.72	27.68	0.521
19	6.53	29.00	0.486
28	6.62	29.33	0.477
37	6.84	29.60	0.460
47	6.81	29.74	0.462
56	6.85	29.78	0.461

STA A-9      47° 23.5' N WEATHER 00 30 Mar 49    123° 07.9' W WIND SE 3 0917 (+8)    DEPTH 59 fm    --° F Musqueti Pt.			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	7.87	25.97	0.715
5	7.57	27.27	0.678
10	7.31	28.87	0.495
20	7.30	30.03	0.402
30	7.31	30.19	0.392
50	7.26	30.35	0.397
100	7.06	30.28	0.393

STA A-11      47° 55.9' N WEATHER 00 31 Mar 49    122° 38.1' W WIND calm 1215 (+8)    DEPTH --- fm    --° F Tala Pt.			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	7.14	29.00	0.642
10	7.17	29.18	0.614
20	7.09	29.58	0.565
30	7.09	29.67	0.547
80	7.07	29.72	0.507
110	7.00	29.69	0.512

STA A-10      47° 41.6' N WEATHER 00 30 Mar 49    122° 45.5' W WIND N 7 1555 (+8)    DEPTH 63 fm    --° F Hazel Pt.			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	8.00	26.02	0.945
10	7.41	27.05	0.744
20	6.88	29.42	0.501
30	6.88	29.61	0.492
50	6.90	29.89	0.456
75	6.88	29.99	0.473
100	6.90	30.12	0.455

STA A-12      48° 13.4' N WEATHER 00 6 Apr 49    122° 54.3' W WIND NW 6 1358 (+8)    DEPTH 39 fm    --° F Protection Island			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	7.90	30.28	0.549
10	7.39	30.48	0.524
20	7.42	30.64	0.509
30	7.37	31.20	0.484
40	7.45	31.44	0.464
50	7.46	31.56	0.463
65	7.49	31.89	0.448

STA A-13 48° 09.4' N WEATHER 00  
 6 Apr 49 122° 42.5' W WIND NW 8  
 1648 (+8) DEPTH 33 fm --° F  
 Admiralty Head

Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	7.46	29.43	0.602
5	7.39	29.45	0.603
10	7.42	29.51	0.591
20	7.38	29.61	0.587
30	7.36	29.83	0.560
40	7.40	30.01	0.556
55	7.44	30.25	0.544

STA A-15 47° 33.8' N WEATHER 00  
 25 Apr 49 122° 26.5' W WIND SE 6  
 1522 (+8) DEPTH --- fm --° F  
 Alki Pt.

Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	8.70	28.80	0.580
10	7.84	29.16	0.566
20	7.25	29.45	0.539
50	7.18	29.74	0.484
100	7.39	29.90	0.504
150	7.53	30.08	0.504
210	7.78	30.23	0.502

STA A-14 47° 43.1' N WEATHER 00  
 14 Apr 49 122° 26.3' W WIND N 11  
 1452 (+8) DEPTH --- fm --° F  
 Pt. Jefferson

Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	8.45	28.24	0.644
10	7.37	29.02	0.550
20	7.16	29.23	0.531
50	6.96	29.45	0.504
100	7.15	29.76	0.488
150	7.10	29.81	0.494
250	6.99	29.90	0.508

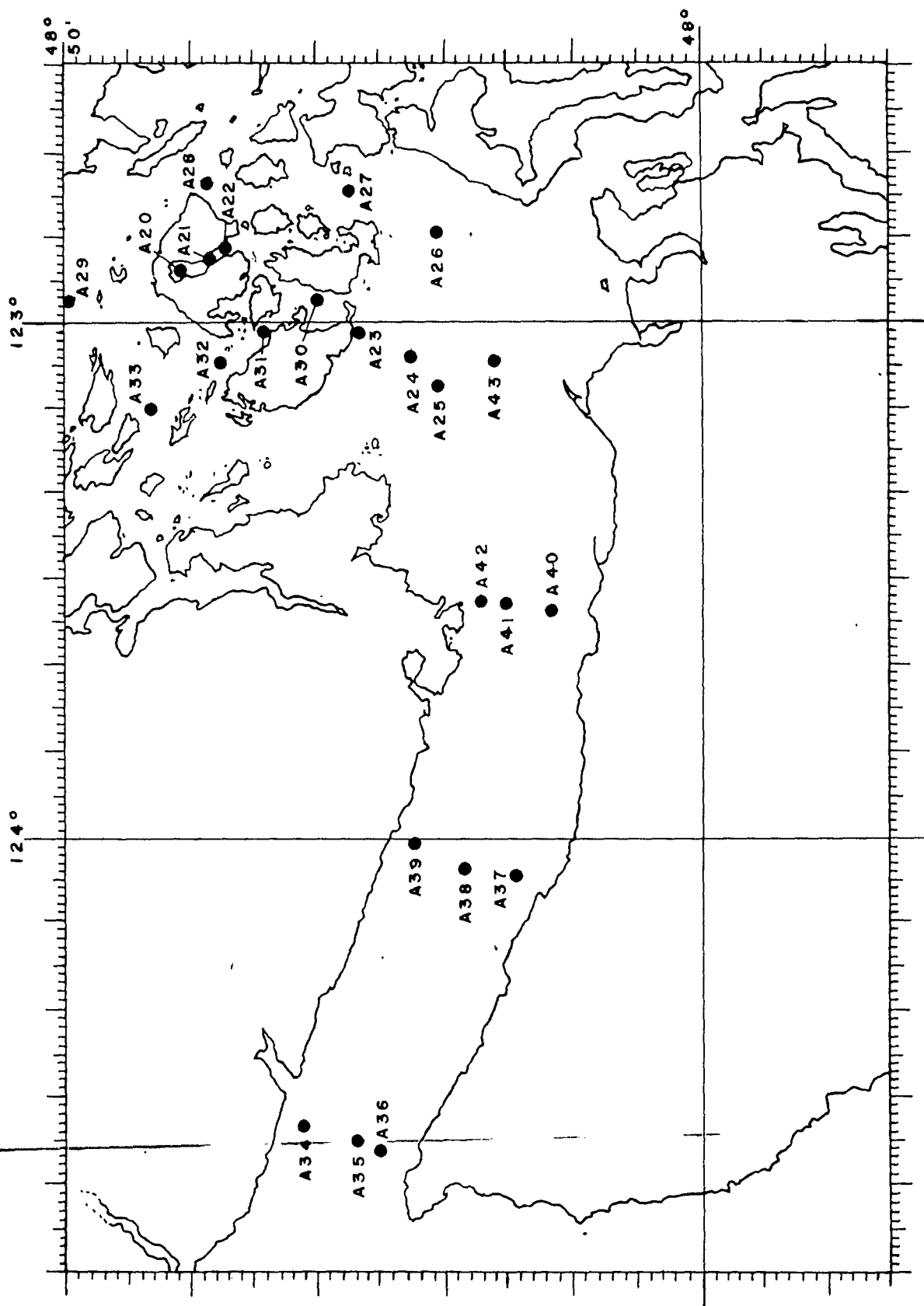
STA A-16 47° 37.3' N WEATHER 00  
 26 Apr 49 122° 41.5' W WIND calm  
 0945 (+8) DEPTH --- fm --° F  
 Dyes Inlet

Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	10.06	28.71	0.680
5	9.15	28.89	0.622
10	9.04	28.91	0.602
15	9.07	28.93	0.600
20	9.00	28.89	0.591
30	9.02	28.91	0.580

STA A-17    47° 38.0' N WEATHER 00 26 Apr 49    122° 35.0' W WIND calm 1453 (+8)    DEPTH 21 fm    --° F Port Orchard			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	9.97	28.96	0.621
5	8.88	29.06	0.608
10	8.30	29.16	-----
15	8.28	29.13	0.575
20	8.21	29.05	0.562
30	8.18	29.13	0.564

STA A-19    47° 44.0' N WEATHER 00 12 May 49    122° 26.0' W WIND N 10 1448 (+8)    DEPTH --- fm    --° F Pt. Jefferson			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	11.61	26.85	0.572
10	8.83	28.51	0.515
20	8.20	29.14	0.506
50	8.00	29.49	0.494
100	8.07	29.67	0.481
198	7.83	29.96	0.438
246	7.86	29.99	0.431

STA A-18    47° 41.9' N WEATHER b. 5 May 49    122° 45.3' W WIND calm 0957 (+8)    DEPTH 38 fm    --° F Hazel Pt.			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	9.90	28.39	0.954
10	8.91	29.00	0.792
20	8.33	29.74	0.567
30	8.11	29.97	0.512
40	7.88	30.05	0.482
50	7.66	30.10	0.467
65	7.60	30.10	0.456



Oceanographic Station Locations  
 ONCORHYNCHUS Station Nos. A-20 to A-43  
 14 July - 14 September 1949

STA A-20 48° 40.8' N WEATHER b.c.  
 14 July 49 122° 53.8' W WIND SE 2  
 1206 (+8) DEPTH 13 fm --° F  
 East Sound

Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	16.49	30.19	0.625
5	16.08	30.14	0.640
10	10.63	30.28	0.482
15	10.38	30.35	0.421
20	10.35	30.46	0.375

STA A-22 48° 37.2' N WEATHER b.c.  
 14 July 49 122° 51.0' W WIND S 5  
 1351 (+8) DEPTH 26 fm --° F  
 Olga

Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	14.89	30.19	0.661
5	10.95	30.32	0.638
10	10.57	30.28	0.480
15	10.42	30.43	0.425
20	10.31	30.39	0.384
30	10.10	30.44	0.285
37	9.99	30.50	0.223

STA A-21 48° 38.5' N WEATHER b.c.  
 14 July 49 122° 52.8' W WIND SE 7  
 1308 (+8) DEPTH 17 fm --° F  
 Rosario

Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
0	16.30	30.28	0.647
5	12.44	30.25	0.625
10	10.66	30.28	0.541
15	10.45	30.39	0.461
20	10.21	30.39	0.353
26	9.96	30.48	0.263

STA A-23 48° 26.8' N WEATHER b.c.  
 4 Aug 49 123° 01.1' W WIND SE 5  
 1010 (+8) DEPTH --- fm --° F  
 Cattle Pt.

Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	10.07	30.77	0.357
25	9.27	31.58	0.311
50	9.25	31.62	0.303
75	9.01	31.91	0.285
100	8.88	32.10	0.281
125	8.61	32.41	0.263
140	8.50	32.32	0.260

STA A-24      48° 22.7' N WEATHER b.c. 4 Aug 49      123° 04.0' W WIND SE 5 1244 (+8)      DEPTH 83 fm    --° F Cattle Pt.			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	10.51	30.34	0.383
25	9.57	31.31	0.331
50	9.20	31.78	0.297
75	8.76	32.12	0.275
100	8.38	32.52	0.249
125	7.99	32.84	0.232
150	7.89	32.95	0.225

STA A-26      48° 20.8' N WEATHER b.c. 10 Aug 49      122° 49.4' W WIND SE 12 1118 (+8)      DEPTH 54 fm    --° F Lawson Reef S.			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	10.34	30.62	0.348
10	10.17	30.64	0.343
25	10.17	30.70	0.339
50	10.00	30.81	0.335
75	9.36	31.56	0.300
100	9.06	31.76	0.289

STA A-25      48° 20.7' N WEATHER b.c. 4 Aug 49      123° 07.2' W WIND SW 9 1410 (+8)      DEPTH 73 fm    --° F Hein Bank			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	11.20	30.10	0.432
10	10.58	30.53	0.417
25	9.68	31.26	0.340
50	9.23	31.76	0.307
75	7.97	32.75	0.244
100	7.63	33.03	0.229
110	7.63	33.04	0.229

STA A-27      48° 27.3' N WEATHER b.c. 10 Aug 49      122° 44.4' W WIND SE 2 1520 (+8)      DEPTH 66 fm    --° F Belle Rocks			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	10.53	30.34	0.362
10	10.26	30.37	0.360
25	10.27	30.37	0.357
50	10.17	30.48	0.351
75	10.04	30.72	0.340
96	-----	31.08	0.327
116	-----	<del>31.42</del>	<del>0.305</del>



STA A-28    48° 38.6' N    WEATHER 61 12 Aug 49    122° 43.5' W    WIND SE 12 0955 (+8)    DEPTH 56 fm    --° F Pea Pod Rock			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	10.24	30.35	0.354
7	10.13	30.39	0.355
22	10.08	30.44	0.357
47	10.08	30.43	0.355
72	10.07	30.43	0.350
97	10.03	30.52	0.350

STA A-30    48° 29.9' N    WEATHER 00 15 Aug 49    122° 57.3' W    WIND SE 8 0835 (+8)    DEPTH 66 fm    --° F Shark Reef			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	10.16	30.91	0.356
10	10.10	30.91	0.357
25	10.14	30.91	0.359
49	10.12	30.93	0.353
74	-----	30.93	0.350
98	9.85	31.11	0.343

STA A-29    48° 49.8' N    WEATHER 61 12 Aug 49    122° 57.6' W    WIND SE 6 1339 (+8)    DEPTH 118 fm    --° F Boundary Pass, N.			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	13.05	26.27	0.652
10	-----	28.98	0.415
25	10.22	30.23	0.363
50	9.97	30.44	0.342
75	9.89	30.53	0.342
100	-----	30.79	0.325
146	9.49	30.99	0.325
193	9.34	31.20	0.306

STA A-31    48° 34.2' N    WEATHER 00 15 Aug 49    123° 01.0' W    WIND SE 8 0950 (+8)    DEPTH 70 fm    --° F Neck Pt.			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	10.20	30.77	0.362
10	10.24	30.86	0.362
25	10.10	30.86	0.358
50	10.11	30.90	0.360
75	-----	30.86	-----
100	9.90	31.04	0.337
125	9.76	30.97	-----

STA A-32    48° 37.6' N WEATHER 00 15 Aug 49    123° 04.4' W WIND SE 8 1121 (+8)    DEPTH 120 fm --° F Flat Top Island			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	-----	30.16	0.398
10	10.08	30.17	0.391
25	10.30	30.46	0.356
50	-----	30.68	0.350
75	10.07	30.79	0.345
100	9.55	30.97	0.335
150	9.20	31.51	0.297
200	9.14	31.67	0.297

STA A-33    48° 43.1' N WEATHER 00 15 Aug 49    123° 10.1' W WIND calm 1419 (+8)    DEPTH 163 fm --° F Turn Pt., N.			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	10.44	29.27	0.444
10	10.12	29.47	0.402
25	-----	29.61	0.381
50	9.65	30.53	0.342
74	9.10	31.64	0.290
98	8.65	32.12	0.261
147	8.36	32.32	0.259
188	8.36	32.54	0.247
237	8.35	32.54	0.245

STA A-34 48° 31.1' N WEATHER b.c.  
10 Sept 49 124° 33.2' W WIND NE 4  
1125 (+8) DEPTH 84 fm --° F  
Owen Pt.

Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	10.48	31.55	0.397	1.94
10	10.22	31.56	0.374	2.01
25	9.57	31.74	0.310	2.11
50	8.86	32.36	0.257	2.31
75	7.96	33.22	0.183	2.41
100	7.19	33.64	0.147	2.31
150	6.98	33.91	0.127	2.00

STA A-36 48° 24.9' N WEATHER b.  
11 Sept 49 124° 36.3' W WIND E 4  
0923 (+8) DEPTH 99 fm --° F  
Off Waada Island

Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	9.55	32.36	0.346	2.20
10	8.88	32.97	0.297	2.26
25	8.45	33.19	0.252	2.22
49	7.53	33.68	0.201	2.31
74	7.37	33.69	0.185	2.45
98	7.10	33.86	0.168	2.44
148	7.20	33.91	0.156	2.19

STA A-35 48° 26.9' N WEATHER b.c.  
10 Sept 49 124° 35.1' W WIND SE 4  
1310 (+8) DEPTH 134 fm --° F  
Neah Bay

Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	10.72	31.22	0.410	2.31
10	-----	31.69	0.290	2.42
25	-----	32.54	0.175	2.31
49	8.01	33.37	0.205	2.92
74	7.50	33.64	0.183	2.52
98	7.28	33.68	0.162	2.94
147	7.29	33.78	0.153	2.62
196	7.00	33.93	0.125	2.62
236	6.99	33.95	0.127	2.40

STA A-37 48° 14.4' N WEATHER 00  
12 Sept 49 124° 04.5' W WIND SE 4  
0843 (+8) DEPTH 87 fm 47° F  
Pillar Pt. III

Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	10.44	31.24	0.389	2.35
10	10.00	31.85	0.381	2.34
24	8.66	32.63	0.233	2.52
48	7.70	33.49	0.176	2.67
72	7.28	33.73	0.153	2.60
97	7.12	33.78	0.149	2.68
145	7.17	33.84	0.137	2.46

STA A-38    48° 18.5' N WEATHER 00 12 Sept 49   124° 03.8' W WIND SE 4 1040 (+8)    DEPTH 102 fm --° F Pillar Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	10.74	31.11	0.370	2.31
10	10.16	31.46	0.374	2.41
24	9.54	31.78	0.303	2.40
48	9.03	32.10	0.252	2.52
72	7.75	33.39	0.169	2.71
97	7.27	33.71	0.127	2.95
139	6.81	33.93	0.124	2.79
172	6.98	33.93	0.123	2.81

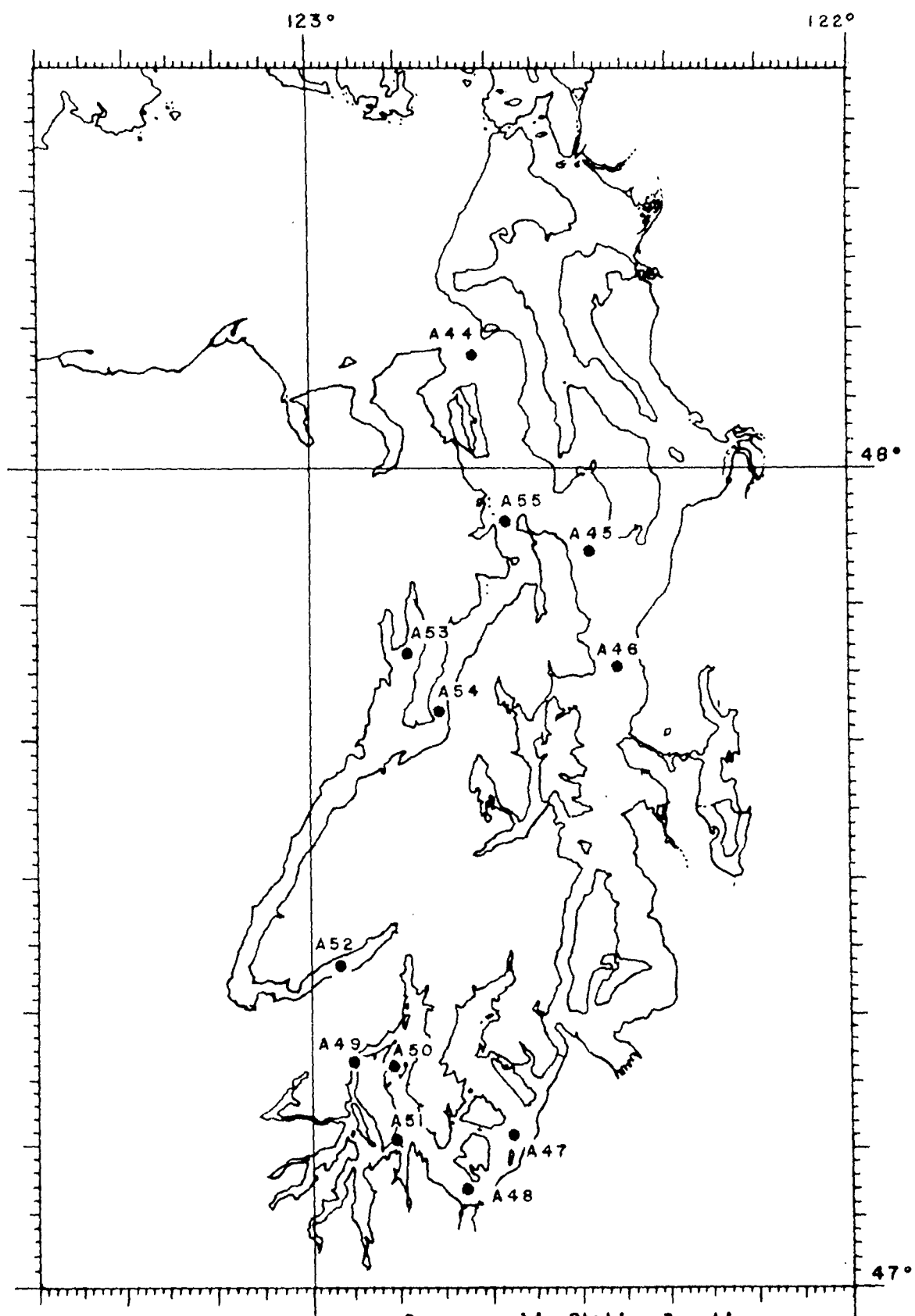
STA A-40    48° 11.5' N WEATHER 00 13 Sept 49   123° 33.3' W WIND SW 5 1019 (+8)    DEPTH 69 fm --° F Angeles Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	9.84	31.53	0.291	2.31
10	9.30	32.09	0.266	2.38
25	9.09	32.29	0.252	2.30
50	8.12	33.12	0.191	2.57
75	7.68	33.49	0.154	2.71
100	7.58	33.53	0.204	2.65
120	7.74	33.55	0.143	2.30

STA A-39    48° 22.4' N WEATHER 00 12 Sept 49   124° 00.4' W WIND SE 6 1300 (+8)    DEPTH 62 fm    56° F Glacier Pt. I				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	11.14	31.11	0.391	2.54
10	10.26	31.18	0.355	2.21
25	9.86	31.51	0.348	2.36
50	9.71	31.64	0.324	2.73
75	8.53	32.57	0.243	2.54
110	7.09	33.82	0.129	2.68

STA A-41    48° 14.8' N WEATHER 10 13 Sept 49   123° 32.9' W WIND SW 4 1144 (+8)    DEPTH 95 fm    --° F Race Rocks				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	11.84	30.66	0.384	2.23
10	10.36	31.11	0.321	2.37
25	10.19	31.22	0.315	2.21
49	9.24	31.91	0.247	2.47
74	7.46	33.49	0.144	2.71
98	7.27	33.78	0.130	2.62
138	7.00	33.87	0.127	2.71
167	7.15	33.84	0.117	2.69

STA A-42    48° 17.0' N WEATHER 10 13 Sept 49 123° 32.6' W WIND SW 1 1306 (+8) DEPTH 70 fm --° F Near Race Rocks				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	10.25	31.20	0.322	2.32
8	10.02	31.26	0.321	2.35
23	9.36	31.82	0.273	2.37
48	7.52	33.44	0.142	2.72
73	6.91	33.89	0.111	3.07
108	7.08	33.91	0.110	2.49

STA A-43    48° 15.8' N WEATHER 45 14 Sept 49 123° 04.5' W WIND SE 3 1330 (+8) DEPTH 85 fm --° F New Dungeness				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	10.72	30.53	0.357	2.26
10	10.23	30.95	0.314	2.24
24	10.05	31.33	0.295	2.49
49	8.73	32.41	0.217	2.51
73	8.24	32.94	0.184	2.54
98	8.00	33.04	0.168	2.66
137	7.74	33.46	0.149	2.64



Oceanographic Station Locations  
 ONCORHYNCHUS Station Nos. A-44 to A-55  
 14 September - 3 December 1949

STA A-44    48° 08.1' N WEATHER 0 14 Sept 49 122° 41.3' W WIND SE 13 1746 (+8) DEPTH --- fm --° F Port Townsend				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	10.76	30.99	0.343	2.25
10	10.50	31.22	0.305	2.19
24	10.20	31.36	0.288	2.19
49	10.12	31.46	0.285	2.23
73	9.80	31.62	0.274	2.37
103	-----	32.09	0.229	2.32

STA A-46    47° 45.3' N WEATHER 63 15 Sept 49 122° 25.7' W WIND SE 22 1115 (+8) DEPTH --- fm --° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	11.92	30.23	0.357	2.20
9	11.86	30.25	0.370	2.18
23	11.73	30.28	0.360	2.21
46	11.54	30.43	0.348	2.21
70	11.37	30.53	0.345	2.17
93	11.45	30.64	0.341	2.10
130	11.30	30.68	0.331	2.14
169	11.18	30.73	0.329	2.24
207	11.31	30.75	0.327	2.08

STA A-45    47° 53.9' N WEATHER 63 15 Sept 49 122° 28.7' W WIND SE 25 0920 (+8) DEPTH --- fm --° F Pt. No Point				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	12.19	30.13	0.387	2.04
10	12.06	30.12	0.379	2.14
24	11.79	30.25	0.348	2.19
48	11.68	30.32	0.298	1.96
73	11.50	30.43	0.337	2.10
97	11.58	30.50	0.334	2.11
123	11.34	30.53	-----	2.17
161	11.35	30.68	0.329	2.13

STA A-47    47° 11.1' N WEATHER 0 20 Nov 49 122° 37.7' W WIND S 6 1201 (+8) DEPTH 91 fm --° F Gordon Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	10.55	30.23	0.392	2.37
10	10.49	30.19	0.391	2.45
25	10.58	30.19	0.386	2.64
50	10.56	30.21	0.394	2.58
75	10.55	30.28	0.393	2.41
100	10.50	30.26	0.378	2.52
130	10.43	30.28	0.382	2.60
160	10.48	30.28	0.382	2.60

STA A-48    47° 07.3' N WEATHER 0 20 Nov 49    122° 42.7' W WIND S 3 1448 (+8)    DEPTH 32 fm    --° F Nisqually Reach				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	10.60	30.01	0.404	2.67
10	10.56	30.19	0.386	2.72
25	10.62	30.21	0.424	2.84
50	10.45	30.19	0.409	2.84

STA A-50    47° 16.1' N WEATHER 0 21 Nov 49    122° 51.3' W WIND S 6 1600 (+8)    DEPTH 30 fm    --° F Case Inlet				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	10.81	29.76	0.423	2.84
10	10.77	29.78	0.406	3.23
20	10.86	29.87	0.390	3.23
30	10.84	29.97	0.375	3.10
50	10.78	30.01	0.368	2.84

STA A-49    47° 16.3' N WEATHER 60 21 Nov 49    122° 55.4' W WIND S 2 1320 (+8)    DEPTH 15 fm    --° F Pickering Passage				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
0	10.83	29.11	0.409	2.76
10	10.79	29.40	0.397	2.99
20	10.85	29.49	0.405	3.22

STA A-51    47° 10.7' N WEATHER 63 22 Nov 49    122° 50.6' W WIND S 3 0826 (+8)    DEPTH 22 fm    --° F Istami Ledge				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	10.68	29.72	0.400	3.01
10	10.66	29.79	0.388	3.20
20	10.68	29.97	0.376	3.17
30	10.63	30.01	0.375	3.13

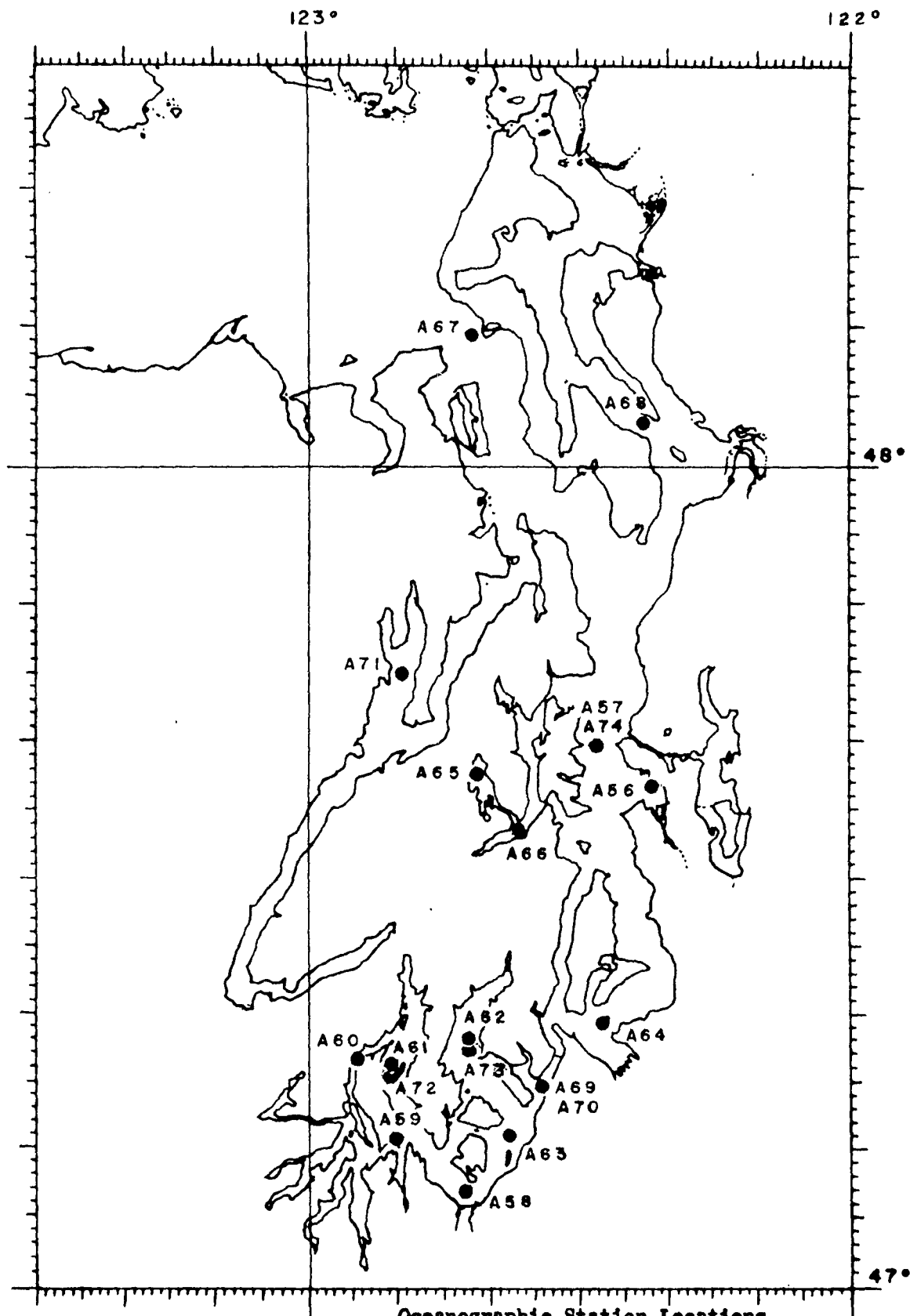


STA A-52      47° 23.7' N WEATHER O 1 Dec 49      122° 56.7' W WIND S 20 0942 (+8)      DEPTH 12 fm    --° F Lynch Cove				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	9.19	19.90	-----	2.64
5	9.24	20.44	0.553	2.74
10	9.81	29.25	0.248	3.47
18	9.81	29.85	0.230	3.61

STA A-54      47° 42.1' N WEATHER c. 2 Dec 49      122° 45.7' W WIND SW 10 1638 (+8)      DEPTH 70 fm    --° F Hazel Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	9.26	25.91	0.532	3.24
10	9.64	28.73	0.410	3.07
25	9.34	30.50	0.376	3.01
50	9.30	30.61	0.380	2.99
75	9.29	30.66	0.395	2.78
100	9.28	30.72	0.386	2.81

STA A-53      47° 46.3' N WEATHER b.c. 2 Dec 49      122° 49.2' W WIND S 4 1200 (+8)      DEPTH 103 fm    --° F Tabook Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	9.54	27.14	0.552	2.20
10	9.54	27.34	0.535	2.60
25	10.01	30.64	0.252	3.01
50	9.63	30.64	0.276	2.34
75	9.62	30.73	0.314	2.49
100	9.51	30.66	0.341	2.62
140	9.50	30.70	0.316	2.73
180	9.49	30.77	0.310	2.92

STA A-55      47° 55.9' N WEATHER O 3 Dec 49      122° 38.2' W WIND N 4 1210 (+8)      DEPTH 64 fm    --° F Tala Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	9.23	28.78	0.479	2.56
10	9.10	29.40	0.466	2.70
25	9.45	30.19	0.460	2.82
50	9.35	30.59	0.420	2.88
75	9.43	30.53	0.418	2.76
110	9.25	30.75	0.397	2.49



Oceanographic Station Locations  
 ONCORHYNCHUS Station Nos. A-56 to A-74  
 9 January - 13 December 1950

STA A-56    47° 36.7' N WEATHER C 9 Jan 50    122° 22.5' W WIND -- 1518 (+8)    DEPTH 58 fm    --° F Elliott Bay				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (ug-at/L)
1	7.18	27.14	0.543	----
10	8.04	29.40	0.499	----
20	7.87	29.43	0.499	----
30	8.05	29.49	0.496	----
50	8.22	29.63	0.482	----
74	7.96	29.83	0.464	----
98	7.98	30.03	0.450	----
123	8.60	30.12	0.452	----

STA A-58    47° 07.2' N WEATHER c. 21 Feb 50    122° 42.4' W WIND SE 16 0927 (+8)    DEPTH 41 fm    45° F Nisqually Reach				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (ug-at/L)
1	6.16	27.97	0.581	2.92
16	6.24	28.73	0.549	2.87
31	6.30	28.84	0.547	2.70
41	6.28	28.96	0.545	2.45

STA A-57    47° 39.8' N WEATHER O 9 Jan 50    122° 28.3' W WIND -- 1627 (+8)    DEPTH 124 fm    --° F West Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (ug-at/L)
1	8.04	29.63	0.489	----
10	8.18	29.67	0.491	----
25	7.97	29.63	0.486	----
50	8.21	29.87	0.479	----
74	8.06	29.90	0.478	----
98	8.04	29.92	0.475	----
147	8.06	29.97	0.472	----
196	8.09	29.97	0.475	----

STA A-59    47° 10.6' N WEATHER c. 21 Feb 50    122° 50.8' W WIND SW 15 1128 (+8)    DEPTH 26 fm    46° F Istami Ledge				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (ug-at/L)
1	6.18	27.86	0.579	2.74
10	6.18	28.08	0.565	2.72
20	6.22	28.42	0.553	2.76
30	6.26	28.64	0.548	2.44

STA A-60    47° 16.6' N   WEATHER 63 22 Feb 50   122° 55.2' W   WIND S 4 0955 (+8)   DEPTH 19 fm   46° F Pickering Passage				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/l)	PO <sub>4</sub> (μg-at/L)
1	6.02	26.56	0.576	3.45
5	6.06	27.00	0.571	3.31
10	6.03	27.38	0.577	3.23
25	6.07	27.86	0.555	3.27

STA A-62    47° 17.9' N   WEATHER 63 23 Feb 50   122° 42.8' W   WIND -- 1008 (+8)   DEPTH 44 fm   41° F Green Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	5.96	28.48	0.642	2.68
10	6.24	28.64	0.577	2.99
20	6.22	28.66	0.568	2.96
30	6.23	28.69	0.564	2.95
50	6.07	28.77	0.541	2.78
75	6.33	28.93	0.536	2.97

STA A-61    47° 16.0' N   WEATHER 0 22 Feb 50   122° 51.2' W   WIND S 10 1313 (+8)   DEPTH 30 fm   47° F Case Inlet				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	6.10	27.41	0.596	3.18
5	6.05	27.41	0.588	3.28
10	6.10	27.66	0.592	3.29
20	6.12	27.97	0.566	3.51
30	6.06	28.39	0.531	3.27
50	6.26	28.68	0.524	3.47

STA A-63    47° 11.2' N   WEATHER 63 23 Feb 50   122° 37.9' W   WIND SE 18 1318 (+8)   DEPTH 91 fm   42° F Gordon Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	6.24	28.53	0.555	2.78
10	6.26	28.60	0.565	2.80
24	6.26	28.89	0.532	2.74
49	6.27	28.93	0.528	2.78
73	6.28	28.96	0.529	2.88
97	6.33	29.00	0.523	2.80
121	6.29	29.07	0.524	2.37
145	6.32	28.66	0.544	2.86

STA A-64      47° 19.4' N   WEATHER c. 24 Feb 50    122° 27.4' W   WIND S 10 1046 (+8)    DEPTH 98 fm    48° F Brown Point				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	6.54	26.83	0.555	2.97
10	6.40	29.05	0.535	2.90
25	6.30	29.34	0.524	2.76
49	6.27	29.45	0.523	2.84
73	6.22	29.54	0.518	2.76
97	6.24	29.69	0.521	2.78
126	6.14	29.74	0.513	2.69
155	6.17	29.79	0.509	2.71

STA A-66      47° 33.4' N   WEATHER 60 9 Mar 50    122° 36.9' W   WIND SE 14 1003 (+8)    DEPTH 17 fm    43° F Sinclair Inlet				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	6.49	28.30	0.599	2.80
5	6.51	28.39	0.597	2.80
10	6.48	28.24	0.601	2.84
20	6.52	28.31	0.601	2.88

STA A-65      47° 37.4' N   WEATHER c. 9 Mar 50    122° 41.2' W   WIND SE 10 0847 (+8)    DEPTH 21 fm    43° F Dyes Inlet				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	6.55	27.30	0.657	2.29
5	6.65	27.45	0.649	2.13
10	6.67	27.81	0.613	2.68
20	6.69	27.85	0.593	2.68
25	6.66	27.86	0.613	2.45

STA A-67      48° 09.4' N   WEATHER c. 15 Mar 50    122° 41.6' W   WIND S 14 0927 (+8)    DEPTH 36 fm    45° F Port Townsend				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	6.43	29.51	0.530	----
10	6.48	29.51	0.522	----
20	6.45	29.56	0.525	----
30	6.48	29.54	0.523	----
60	6.47	29.63	0.518	----

STA A-68    48° 03.3' N WEATHER c. 16 Mar 50    122° 23.0' W WIND SSE 14 1626 (+8)    DEPTH 96 fm    48° F Camano Head, West				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	6.61	20.75	0.582	----
10	6.47	27.14	0.577	----
25	6.44	28.64	0.536	----
50	6.49	29.02	0.514	----
75	6.57	29.23	0.513	----
100	7.24	29.45	0.470	----
130	7.20	29.58	0.454	----
160	7.12	29.65	0.457	----

STA A-70    47° 15.9' N WEATHER b.c. 7 Apr 50    122° 34.4' W WIND N 12 1009 (+8)    DEPTH 40 fm    50° F Day Island				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	6.60	28.53	0.555	----
10	6.58	28.60	-----	----
25	6.66	28.62	0.553	----
50	6.59	28.60	0.554	----

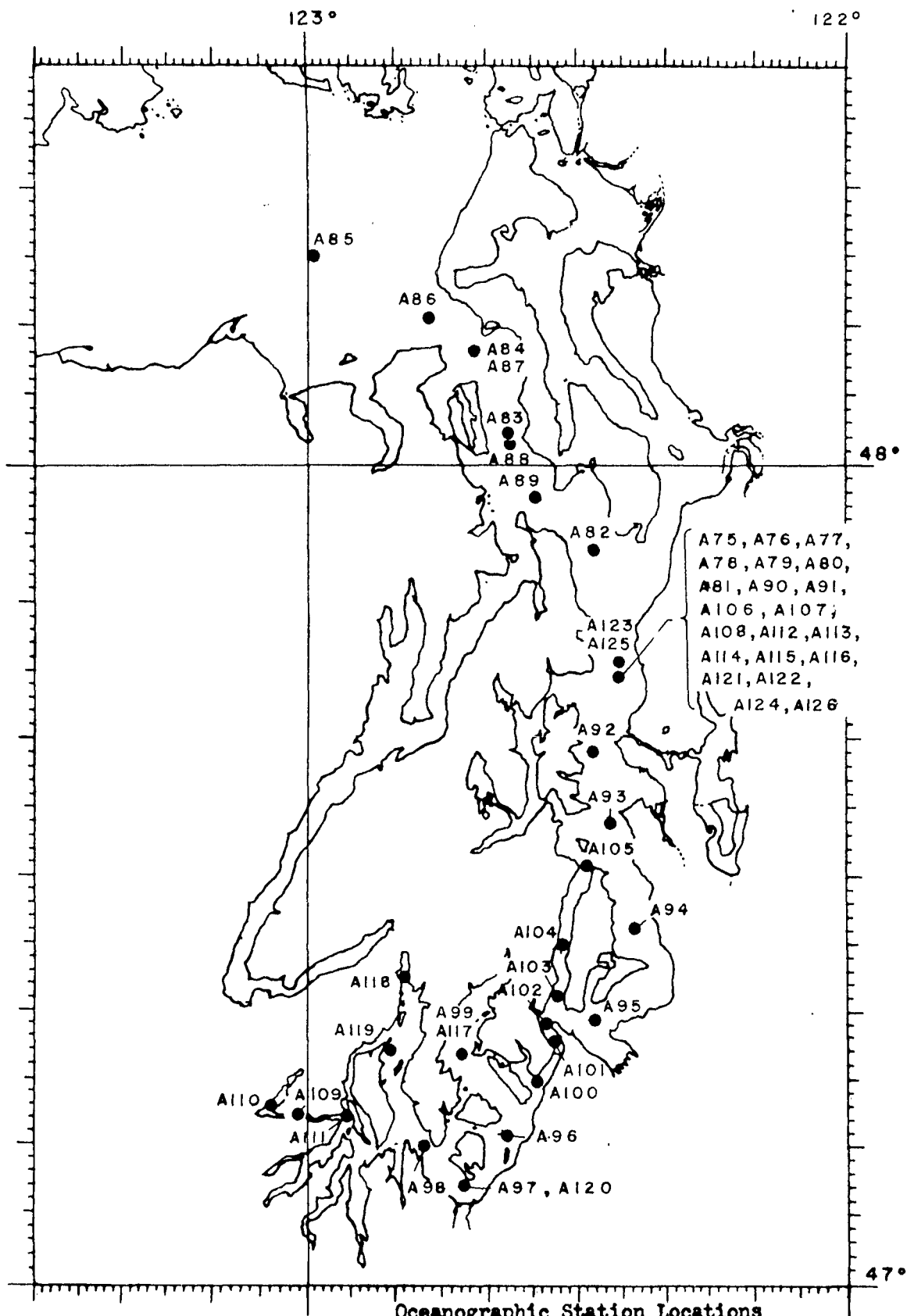
STA A-69    47° 14.6' N WEATHER b.c. 6 Apr 50    122° 34.4' W WIND -- 1700 (+8)    DEPTH 35 fm    54° F Day Island				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	6.60	28.73	0.555	----
10	6.61	28.66	0.566	----
25	6.62	28.68	0.552	----
50	6.59	28.66	0.553	----

STA A-71    47° 45.0' N WEATHER b. 20 July 50    122° 49.7' W WIND -- 1017 (+8)    DEPTH 102 fm    69° F Tabook Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	18.63	25.46	1.101	----
20	8.96	29.07	0.636	----
50	8.46	29.51	0.633	----
75	8.06	29.60	0.592	----
100	-----	29.72	0.593	----
140	7.51	29.97	0.523	----
175	7.49	30.10	0.446	----

STA A-72    47° 15.7' N WEATHER b. 16 Aug 50    122° 51.3' W WIND NE 10 1406 (+8)    DEPTH 28 fm    72° F Case Inlet				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	17.36	28.82	0.561	----
10	14.27	28.91	0.470	----
20	12.65	29.65	0.420	----
30	12.29	29.70	0.395	----
45	12.10	29.79	0.398	----

STA A-74    47° 39.7' N WEATHER c. 13 Dec 50    122° 28.0' W WIND -- 1140 (+8)    DEPTH 146 fm    45° F West Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	9.45	29.10	0.456	2.91
25	9.46	29.43	0.448	2.86
50	9.38	29.54	0.432	2.98
75	9.23	29.62	0.418	2.73
100	9.07	29.77	0.408	2.52
150	9.22	29.96	0.424	2.92
200	9.28	29.96	0.425	2.86
260	9.32	30.01	0.414	2.89

STA A-73    47° 17.0' N WEATHER b. 17 Aug 50    122° 42.6' W WIND SW 3 1010 (+8)    DEPTH 53 fm    67° F Green Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	14.24	29.43	0.509	----
10	12.13	29.72	0.427	----
20	11.53	29.79	0.384	----
30	11.46	29.68	0.361	----
50	11.39	29.85	0.360	----
80	-----	30.05	0.411	----



Oceanographic Station Locations  
ONCORHYNCHUS Station Nos. A-75 to A-126  
24 January - 27 December 1951



STA A-75    47° 44.4' N WEATHER 63 24 Jan 51    122° 25.4' W WIND N 11 1142 (+8)    DEPTH 155 fm 48° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	8.46	28.49	0.519	2.93
10	8.43	28.70	0.519	2.93
20	8.43	28.86	0.503	2.84
26	8.49	28.92	0.506	2.74
43	8.40	29.00	0.498	2.69
65	8.23	29.00	0.504	2.45
87	8.03	29.14	0.509	2.54
130	8.03	29.22	0.497	2.84
173	8.08	29.30	0.480	2.73
192	8.07	29.32	0.488	2.67
200	8.08	29.34	0.481	2.71
223	8.09	29.34	0.486	2.38

STA A-77    47° 44.4' N WEATHER b. 21 Feb 51    122° 25.4' W WIND N 11 1112 (+8)    DEPTH 155 fm 44° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	7.44	25.51	0.568	2.94
10	7.55	26.79	0.477	3.04
20	7.69	27.84	0.520	2.49
30	7.68	28.11	0.519	2.80
40	7.76	28.62	0.504	3.00
60	7.76	28.86	0.504	3.08
80	7.65	28.91	0.497	3.15
120	7.62	29.07	0.492	3.18
160	7.50	29.33	0.492	3.04
230	7.54	29.17	0.498	2.98
260	7.50	29.23	0.499	2.92

STA A-76    47° 44.4' N WEATHER 00 7 Feb 51    122° 25.4' W WIND -- 1115 (+8)    DEPTH 155 fm --° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	7.72	27.78	0.532	3.01
10	7.74	28.30	0.520	3.08
20	7.80	28.60	0.506	3.05
24	7.81	28.64	0.504	2.66
40	7.83	28.80	0.505	2.72
60	7.75	28.91	0.507	3.01
80	7.77	28.91	0.504	3.09
120	7.71	29.00	0.505	2.97
180	7.60	29.10	0.512	3.17
200	7.55	29.20	0.504	3.04
233	7.60	29.18	0.507	2.94

STA A-78    47° 44.4' N WEATHER b.c. 28 Feb 51    122° 25.4' W WIND calm 1033 (+8)    DEPTH 155 fm 42° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	7.00	25.93	0.566	2.32
10	7.38	27.38	0.544	2.52
20	7.56	27.83	0.547	2.54
30	7.65	28.34	0.507	1.97
50	7.52	28.59	0.512	2.42
75	7.40	28.79	0.514	2.43
100	7.43	28.85	0.507	2.36
150	7.53	29.06	0.497	2.46
200	7.53	29.13	0.499	2.56
245	7.53	29.22	0.492	2.50
275	7.55	29.21	0.500	2.45

STA A-79    47° 44.4' N WEATHER 71 7 Mar 51    122° 25.4' W WIND SSE 17 1116 (+8)    DEPTH 155 fm 36° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	7.20	28.20	0.539	2.64
10	7.23	28.22	0.536	2.58
20	7.24	28.22	0.529	2.50
26	7.25	28.22	0.528	2.65
43	7.27	28.22	0.525	2.71
65	7.35	28.61	0.522	2.45
87	7.40	28.67	0.495	2.45
133	7.35	28.96	0.488	2.42
168	7.31	29.08	0.486	2.42
234	7.30	29.11	0.498	2.49
260	7.29	29.13	0.492	2.60

STA A-81    47° 44.4' N WEATHER b.c. 19 Mar 51    122° 25.4' W WIND N 10 1200 (+8)    DEPTH 155 fm 46° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	7.58	26.57	0.578	2.64
10	7.27	28.10	0.555	2.80
20	7.27	28.48	0.534	2.83
29	7.30	28.64	0.511	2.35
48	7.31	28.84	0.504	2.60
73	7.15	29.00	0.504	2.66
97	7.08	29.09	0.496	2.49
145	6.98	29.33	0.490	2.48
194	6.95	29.68	0.488	2.40
242	6.97	29.78	0.503	2.84
264	6.96	29.78	0.507	2.91

STA A-80    47° 44.4' N WEATHER b.c. 14 Mar 51    122° 25.4' W WIND S 4 1022 (+8)    DEPTH 155 fm 48° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	7.47	28.06	0.550	2.80
10	7.29	28.34	0.539	2.85
20	7.29	28.49	0.527	2.85
30	7.28	28.51	0.520	2.86
49	7.16	28.72	0.519	2.85
74	7.02	28.88	0.512	2.86
98	7.09	28.88	0.504	2.40
148	6.95	29.06	0.502	2.63
197	6.83	29.30	0.504	2.86
237	6.86	29.36	0.503	3.00
264	6.86	29.43	0.503	3.04

STA A-82    47° 53.5' N WEATHER b.c. 19 Mar 51    122° 28.2' W WIND N 10 1427 (+8)    DEPTH 108 fm 50° F Pt. No Point				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	7.67	24.64	0.617	2.13
10	7.28	27.04	0.574	2.14
20	7.28	28.40	0.534	2.38
30	7.26	28.57	0.524	2.32
50	7.12	28.74	0.520	2.32
75	7.14	28.92	0.514	2.21
100	7.05	29.10	0.518	2.27
150	7.02	29.44	0.516	2.34
180	7.00	29.48	0.511	2.22

STA A-83      48° 02.3' N WEATHER b.c. 19 Mar 51    122° 37.6' W WIND N 4 1623 (+8)    DEPTH 70 fm    48° F Bush Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	6.55	28.00	0.548	2.30
10	7.13	28.52	0.535	2.29
20	7.09	28.66	0.530	2.29
30	7.06	28.94	0.527	2.22
49	6.91	29.78	0.515	2.20
74	6.93	30.24	0.510	2.20
98	6.92	30.31	0.504	2.20
113	6.90	30.34	0.501	2.37

STA A-85      48° 15.1' N WEATHER b. 20 Mar 51    122° 59.1' W WIND SW 8 1000 (+8)    DEPTH 88 fm    50° F Eastern Bank, South				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	7.14	29.28	0.535	2.24
10	6.97	29.44	0.530	2.19
20	6.98	29.72	0.518	2.19
30	6.85	30.26	0.505	2.19
50	6.82	30.74	0.489	2.25
75	6.94	31.86	0.417	2.21
90	6.96	31.94	0.412	2.25
136	6.97	32.57	0.364	2.25

STA A-84      48° 08.3' N WEATHER c. 19 Mar 51    122° 41.2' W WIND S 2 1733 (+8)    DEPTH 67 fm    48° F Port Townsend				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	7.43	28.30	0.552	2.33
10	7.12	28.90	0.537	2.01
20	7.07	29.04	0.529	2.45
30	7.07	29.10	0.532	2.13
50	6.99	29.26	0.525	2.01
75	7.00	29.48	0.524	1.97
100	6.93	30.17	0.503	2.11

STA A-86      48° 10.6' N WEATHER b. 20 Mar 51    122° 46.1' W WIND W 7 1156 (+8)    DEPTH 36 fm    52° F Middle Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	7.10	30.00	0.522	2.13
10	6.97	30.31	0.501	2.19
20	6.95	30.39	-----	2.33
30	6.95	30.40	0.495	2.04
50	6.90	30.88	0.478	2.26

STA A-87      48° 08.1' N WEATHER c. 20 Mar 51    122° 40.9' W WIND NW 12 1251 (+8)    DEPTH 65 fm    50° F Port Townsend				
Depth (m)	Temp (°C)	Sal (‰)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	7.26	29.42	-----	2.25
10	7.08	29.58	0.528	2.27
20	7.04	29.62	0.521	2.30
30	7.07	29.68	0.519	2.27
50	6.94	30.21	0.513	2.30
75	6.96	30.48	0.512	2.35
100	6.96	30.53	0.510	2.26

STA A-89      47° 57.7' N WEATHER C 20 Mar 51    122° 34.7' W WIND SE 4 1523 (+8)    DEPTH 66 fm    --° F Double Bluff				
Depth (m)	Temp (°C)	Sal (‰)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	7.54	27.15	0.571	2.10
10	7.43	27.77	0.596	2.21
20	7.20	28.38	0.510	2.25
50	7.05	29.22	0.507	2.27
100	6.98	30.01	0.513	2.29

STA A-88      48° 01.7' N WEATHER O 20 Mar 51    122° 37.4' W WIND N 1 1508 (+8)    DEPTH 75 fm    50° F Bush Point				
Depth (m)	Temp (°C)	Sal (‰)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	7.30	28.34	0.519	2.33
10	7.14	28.74	0.524	2.33
20	7.14	28.74	0.537	2.33
30	7.14	28.75	0.537	2.38
50	7.02	29.42	0.556	2.33
75	6.95	29.88	0.548	1.89
94	6.99	30.06	0.529	2.40
122	6.94	30.15	0.546	2.13

STA A-90      47° 44.4' N WEATHER c. 22 Mar 51    122° 25.4' W WIND N 13 1442 (+8)    DEPTH 155 fm    45° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (‰)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	7.77	27.83	0.580	2.56
10	7.44	28.06	0.550	2.53
20	7.41	28.18	0.547	2.45
30	7.32	28.58	0.532	2.57
50	7.16	28.92	0.525	2.54
75	7.13	29.02	0.514	2.54
100	7.09	29.13	0.522	2.72
150	7.05	29.41	0.513	2.59
200	6.98	29.51	0.511	2.58
245	7.02	29.51	0.510	2.60
275	6.98	29.54	0.501	2.56

STA A-91      47° 44.4' N WEATHER b. 27 Mar 51    122° 25.4' W WIND S 4 1101 (+8)    DEPTH 155 fm 47° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	7.50	27.96	0.526	2.50
10	7.28	28.17	0.512	2.33
20	7.34	28.41	0.526	2.30
30	7.35	28.55	0.505	2.30
50	7.25	28.72	0.499	2.26
75	7.24	28.88	0.497	2.25
100	7.21	29.02	0.497	2.11
150	7.20	29.06	0.492	2.15
200	7.06	29.26	0.486	2.29
245	7.05	29.36	0.480	2.42
275	7.02	29.37	0.484	2.38

STA A-93      47° 33.8' N WEATHER b.c. 27 Mar 51    122° 26.5' W WIND S 3 1545 (+8)    DEPTH 136 fm 50° F Alki Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	7.34	28.46	0.516	2.38
10	7.33	28.46	0.516	2.35
20	7.33	28.48	0.511	2.35
30	7.31	28.50	0.508	2.27
50	7.31	28.49	0.506	2.23
75	7.26	28.62	0.501	2.27
100	7.13	29.09	0.485	2.37
150	7.04	29.21	0.484	2.32
200	7.05	29.36	0.474	2.38
230	6.98	29.42	0.478	2.45

STA A-92      47° 38.8' N WEATHER b. 27 Mar 51    122° 28.5' W WIND SE 2 1951 (+8)    DEPTH 124 fm 48° F West Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	8.16	28.48	0.520	2.41
10	7.25	28.56	0.521	2.29
20	7.28	28.59	0.497	2.19
30	7.26	28.62	0.505	2.09
50	7.24	28.78	0.492	2.16
75	7.18	28.97	0.496	2.19
100	7.13	29.12	0.492	2.26
150	7.09	29.28	0.478	2.37
200	7.02	29.36	0.482	2.35

STA A-94      47° 26.0' N WEATHER b.c. 27 Mar 51    122° 23.7' W WIND SE 4 1740 (+8)    DEPTH 124 fm 48° F Pully Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	7.73	27.76	0.559	2.05
10	7.43	28.21	0.536	2.04
20	7.44	28.23	0.532	2.11
30	7.36	28.32	0.520	----
50	7.26	28.68	0.494	1.97
75	7.20	28.84	0.492	2.21
100	7.16	29.02	0.489	2.31
150	7.07	29.28	0.480	2.18
200	6.95	29.42	0.478	1.99

STA A-95    47° 19.4' N WEATHER 10 28 Mar 51    122° 27.9' W WIND SE 2 0738 (+8)    DEPTH 98 fm    43° F Brown Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	8.08	26.52	0.568	1.98
10	7.43	28.17	0.526	2.19
20	7.35	28.38	0.516	2.23
30	7.28	28.58	0.506	2.11
50	7.27	28.67	0.493	1.97
75	7.20	28.87	0.494	2.07
100	7.14	29.06	-----	2.37
160	7.00	29.30	0.478	2.20

STA A-97    47° 07.1' N WEATHER 10 28 Feb 51    122° 42.2' W WIND NE 3 1132 (+8)    DEPTH 37 fm    52° F Nisqually Reach				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	7.87	26.48	0.578	2.27
10	7.45	27.46	0.567	2.46
20	7.43	27.64	0.554	2.41
30	7.42	27.69	0.546	2.45
40	7.42	27.72	0.544	2.19
60	7.34	28.00	0.531	2.13

STA A-96    47° 10.9' N WEATHER 10 28 Mar 51    122° 37.7' W WIND NE 2 1009 (+8)    DEPTH 94 fm    52° F Gordon Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	7.73	27.04	0.547	2.18
10	7.34	27.83	0.528	2.17
20	7.34	27.92	0.521	2.09
30	7.34	28.06	0.519	2.09
50	7.34	28.12	0.513	2.13
75	7.29	28.22	0.512	2.35
100	7.33	28.32	0.510	2.48
160	7.28	28.39	0.501	2.49

STA A-98    47° 10.0' N WEATHER 10 28 Mar 51    122° 46.9' W WIND NE 4 1326 (+8)    DEPTH 57 fm    55° F Devils Head				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	7.76	27.19	0.542	1.83
10	7.52	27.22	-----	1.95
20	7.40	27.54	0.552	2.36
30	7.40	27.60	0.549	2.24
50	7.36	27.82	0.537	2.32
70	7.36	27.83	0.535	2.39
90	7.35	-----	0.533	2.35

STA A-99    47° 16.9' N   WEATHER 10 28 Mar 51   122° 42.4' W   WIND calm 1508 (+8)   DEPTH 56 fm   54° F Green Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	8.62	27.58	0.627	1.81
10	7.33	27.84	0.549	2.11
20	7.28	27.90	0.529	2.21
30	7.29	28.00	0.520	2.01
50	7.29	28.16	0.503	2.18
70	7.29	28.24	0.513	2.33
90	7.31	28.28	0.517	2.52

STA A-101    47° 16.7' N   WEATHER 61 29 Mar 51   122° 32.3' W   WIND S 22 0900 (+8)   DEPTH 40 fm   48° F Pt. Evans				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	7.34	28.46	0.527	2.37
10	7.30	28.50	0.528	2.45
20	7.32	28.52	0.521	2.60
29	7.30	28.58	0.519	2.60
49	7.30	28.66	0.520	2.46

STA A-100    47° 14.8' N   WEATHER c. 29 Mar 51   122° 34.5' W   WIND S 20 0832 (+8)   DEPTH 33 fm   47° F Day Island				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	7.38	28.20	0.545	2.65
10	7.36	28.26	0.531	2.61
20	7.37	28.28	0.536	2.85
29	7.36	28.36	0.538	2.60
48	7.36	28.52	0.521	2.06

STA A-102    47° 19.0' N   WEATHER 63 29 Mar 51   122° 33.7' W   WIND S 16 0932 (+8)   DEPTH 44 fm   45° F Pt. Defiance				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	7.47	28.16	0.549	2.54
10	7.32	28.48	0.522	2.63
20	7.29	28.62	0.521	2.65
30	7.28	28.64	0.515	2.65
50	7.28	-----	0.516	2.61
60	7.20	28.95	0.503	2.29

STA A-103    47° 21.1' N WEATHER O 29 Mar 51    122° 37.5' W WIND S 16 1004 (+8)    DEPTH 56 fm    48° F Spring Beach				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	7.57	27.91	0.554	2.56
10	7.52	28.04	0.529	2.57
20	7.40	28.32	0.542	2.51
29	7.37	28.40	0.534	2.55
49	7.32	28.52	0.519	2.38
78	7.27	28.64	0.519	2.58
88	7.29	28.69	0.511	2.63

STA A-105    47° 30.6' N WEATHER O 29 Mar 51    122° 29.1' W WIND S 24 1140 (+8)    DEPTH 59 fm    --° F Pt. Vashon				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	7.40	28.33	0.491	2.65
10	7.35	28.34	0.534	2.56
20	7.37	28.34	0.529	2.67
29	7.31	28.44	0.522	2.62
49	7.33	28.48	0.526	2.62
73	7.29	28.54	0.524	2.64
98	7.31	28.59	0.520	2.70

STA A-104    47° 25.0' N WEATHER c. 29 Mar 51    122° 31.5' W WIND S 24 1046 (+8)    DEPTH 66 fm    48° F Olalla				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	7.37	28.31	0.538	2.65
10	7.34	28.30	0.534	2.56
20	7.36	28.32	0.531	2.56
29	7.32	28.44	0.524	2.55
49	7.32	28.46	0.524	2.60
73	7.30	28.52	0.521	2.67
97	7.29	28.68	0.515	2.68

STA A-106    47° 44.4' N WEATHER b. 2 Apr 51    122° 25.4' W WIND N 6 1455 (+8)    DEPTH 155 fm    57° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	8.52	27.49	0.587	2.40
10	7.67	28.30	0.548	2.63
20	7.30	28.45	0.526	2.88
30	7.31	28.79	0.515	2.74
50	7.24	28.96	0.519	2.75
75	7.25	29.14	0.509	2.67
100	7.23	29.23	0.509	2.69
150	7.29	29.55	0.509	2.80
200	7.26	29.63	0.492	2.40
241	7.29	29.64	0.494	2.82
270	7.27	29.66	0.492	2.82



STA A-107    47° 44.4' N WEATHER b. 9 Apr 51    122° 25.4' W WIND N 9 1448 (+8)    DEPTH 155 fm    54° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	8.24	28.12	0.709	2.62
10	7.70	28.39	0.580	2.37
20	7.58	28.49	0.552	2.49
30	7.49	28.65	0.537	2.56
50	7.40	28.78	0.526	2.69
75	7.36	29.02	0.506	2.61
100	7.42	29.15	0.506	2.63
150	7.49	29.43	0.509	2.65
200	7.44	29.43	0.502	2.67
245	7.51	29.44	0.506	2.67
275	7.46	29.45	0.506	2.61

STA A-109    47° 12.4' N WEATHER b. 20 Apr 51    123° 01.5' W WIND N 1 1621 (+8)    DEPTH 9 fm    --° F Hammersley Inlet				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	9.86	26.54	0.653	----
3	9.85	26.56	0.654	----
6	9.86	26.56	0.656	----
9	9.85	26.58	0.654	----

STA A-108    47° 44.4' N WEATHER b. 16 Apr 51    122° 25.4' W WIND N 4 1412 (+8)    DEPTH 155 fm    68° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	12.44	24.16	0.858	0.57
10	8.31	28.25	0.645	2.72
20	7.80	28.52	0.567	2.45
30	7.57	28.66	0.543	2.51
50	7.37	28.96	0.509	2.70
75	7.49	29.30	0.495	2.66
100	7.59	29.46	0.498	2.46
150	7.55	29.98	0.464	2.50
200	7.59	30.24	0.468	2.61
242	7.50	30.44	0.462	2.54
272	7.56	30.49	0.457	2.61

STA A-110    47° 13.2' N WEATHER b. 20 Apr 51    123° 04.6' W WIND N 8 1720 (+8)    DEPTH 9 fm    --° F Oakland Bay				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	11.02	24.23	0.575	----
4	10.62	24.29	0.592	----
8	10.58	29.79	0.600	----
12	10.51	25.24	6.605	----

STA A-111 47° 12.3' N WEATHER b. 21 Apr 51 122° 55.6' W WIND N 1 0822 (+8) DEPTH --- fm --° F Pickering Passage				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	9.24	27.02	0.686	----
3	9.20	27.20	0.674	----
6	9.35	27.20	0.674	----
9	9.20	27.21	0.668	----

STA A-113 47° 44.4' N WEATHER c. 7 May 51 122° 25.4' W WIND S 3 1336 (+8) DEPTH 155 fm 50° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	9.25	28.03	0.573	2.10
10	8.75	28.83	0.552	2.18
20	8.46	29.01	0.533	2.29
30	8.11	29.24	0.509	2.38
50	8.14	29.52	0.490	2.38
74	8.13	29.65	0.480	2.40
98	8.15	29.78	0.465	2.49
147	8.05	29.94	0.462	2.65
196	8.00	30.01	0.460	2.48
238	8.03	29.98	0.461	2.52
267	8.00	30.01	0.460	2.58

STA A-112 47° 44.4' N WEATHER b. 23 Apr 51 122° 25.4' W WIND N 16 1431 (+8) DEPTH 155 fm 60° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	9.11	27.87	0.713	1.39
10	9.07	27.88	0.712	1.35
20	8.20	28.41	0.600	1.90
30	7.72	28.98	0.531	2.34
50	7.62	29.29	0.507	2.52
75	7.61	29.44	0.493	2.57
100	7.64	29.70	0.484	2.65
150	7.66	29.86	0.476	2.49
200	7.55	30.07	0.465	2.61
245	7.55	30.07	0.468	2.56
275	7.58	30.07	0.466	2.60

STA A-114 47° 44.4' N WEATHER c. 17 May 51 122° 25.4' W WIND N 14 1507 (+8) DEPTH 155 fm --° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	11.21	26.02	0.634	1.38
10	11.14	28.17	0.591	1.77
20	8.76	29.04	0.467	2.40
30	8.51	29.20	0.503	2.66
50	8.37	29.62	0.468	2.60
75	8.41	29.84	0.449	2.59
100	8.38	29.86	0.445	2.63
150	8.53	30.05	0.438	2.57
200	8.53	30.24	0.428	2.57
245	8.53	30.25	0.429	2.69
275	8.52	30.29	0.422	2.95

STA A-115    47° 44.4' N   WEATHER 00 28 May 51    122° 25.4' W   WIND N 16 1345 (+8)    DEPTH 155 fm   --° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	10.93	26.44	0.772	0.60
10	10.29	28.32	0.658	1.09
20	9.71	28.79	0.593	1.58
30	9.43	28.98	0.549	1.77
50	9.13	29.52	0.480	2.15
75	9.03	29.66	0.468	2.10
100	8.89	29.79	0.456	2.17
150	8.62	29.85	0.438	2.52
200	8.49	29.92	0.432	2.59
245	8.46	29.95	0.433	2.48
275	8.47	29.98	0.427	2.37

STA A-117    47° 16.9' N   WEATHER b. 17 July 51    122° 42.4' W   WIND S 6 1527 (+8)    DEPTH 48 fm   --° F Green Pt.				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	16.57	29.13	0.701	----
10	12.49	29.17	0.550	----
20	11.78	29.22	0.482	----
30	11.20	29.17	0.432	----
50	11.20	29.20	0.416	----
70	11.31	29.34	0.445	----

STA A-116    47° 44.4' N   WEATHER b.c. 14 June 51    122° 25.4' W   WIND N 4 1330 (+8)    DEPTH 155 fm   64° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	14.72	27.47	0.604	1.40
10	10.02	29.05	0.486	1.74
20	9.79	29.17	0.483	1.65
30	9.54	29.38	0.458	1.77
50	9.31	29.67	0.430	1.85
75	9.41	29.87	0.410	1.86
100	9.44	29.89	0.418	1.93
150	9.51	30.09	0.412	1.89
200	9.48	30.14	0.407	1.97
245	9.46	30.19	0.400	1.93
275	9.49	30.23	0.400	2.17

STA A-118    47° 22.5' N   WEATHER 44 19 July 51    122° 49.0' W   WIND calm 0817 (+8)    DEPTH 9 fm   --° F Case Inlet, Victor				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	18.68	27.66	0.479	----
16	12.48	28.89	0.348	----

STA A-119 47° 16.9' N WEATHER b.c. 19 July 51 122° 51.2' W WIND calm 1020 (+8) DEPTH 27 fm --° F Case Inlet				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	16.69	28.75	0.627	----
10	14.60	28.88	0.622	----
30	12.68	29.13	0.491	----
47	11.90	29.11	0.433	----

STA A-121 47° 44.4' N WEATHER b. 24 July 51 122° 25.4' W WIND calm 1435 (+8) DEPTH 155 fm 72° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	13.95	29.42	0.495	1.30
10	12.59	29.44	0.476	1.76
20	11.62	29.54	0.449	2.00
30	11.55	29.58	0.442	1.89
50	11.18	29.66	0.421	2.00
75	11.00	29.92	0.400	2.01
100	11.05	29.97	0.399	2.04
150	10.94	30.00	0.391	2.17
200	10.85	30.00	0.384	2.23
245	10.98	30.16	0.412	2.00
275	10.93	30.17	0.405	2.04

STA A-120 47° 07.2' N WEATHER c. 19 July 51 122° 42.5' W WIND -- 1515 (+8) DEPTH 35 fm --° F Nisqually Reach				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	12.55	29.19	0.528	----
19	12.32	29.32	0.523	----
27	12.22	29.38	0.484	----
40	11.58	29.37	0.466	----

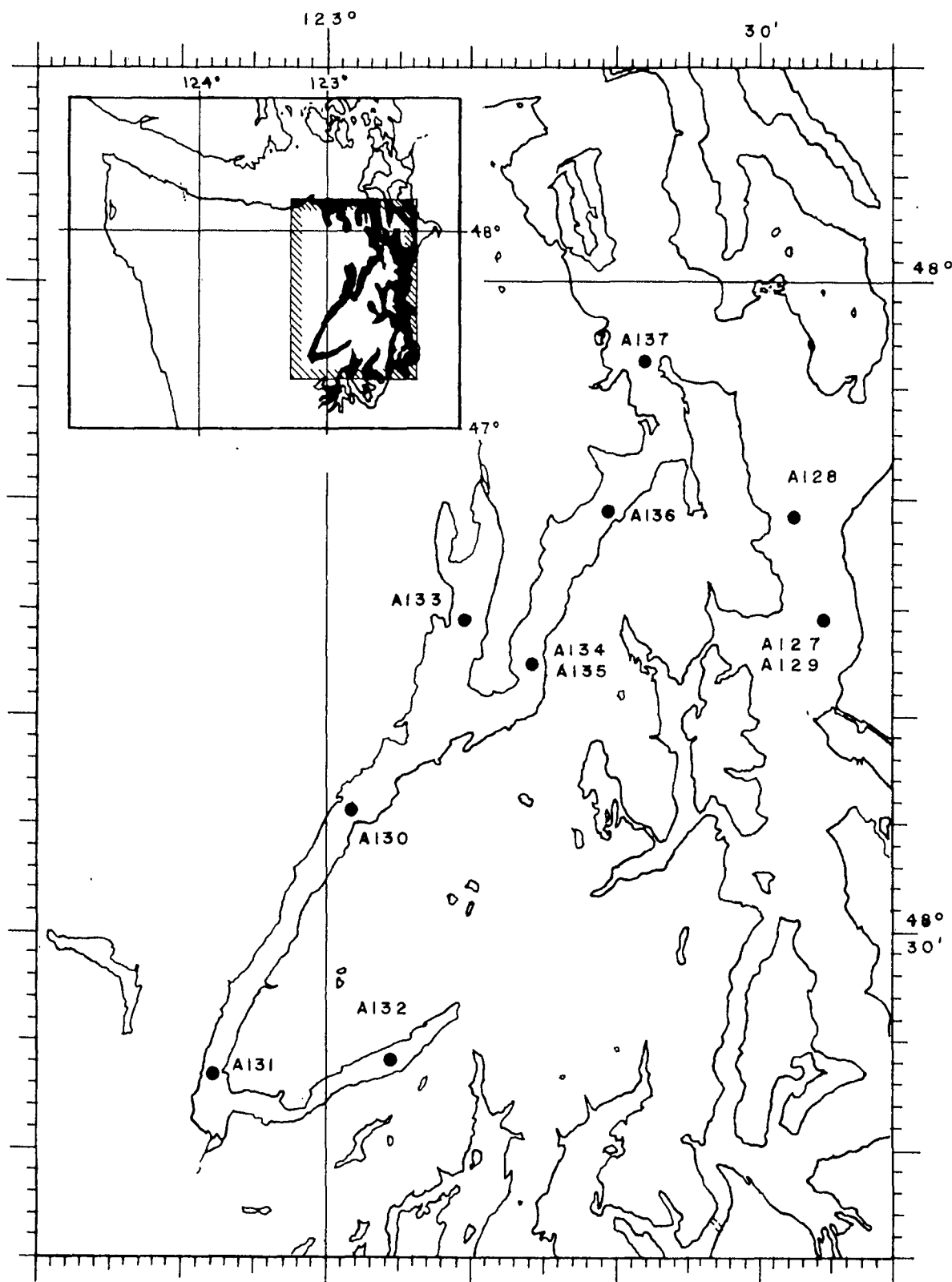
STA A-122 47° 44.4' N WEATHER c. 13 Aug 51 122° 25.4' W WIND N 3 1420 (+8) DEPTH 155 fm 72° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (µg-at/L)
1	14.08	29.69	0.472	2.15
10	12.04	29.82	0.397	2.19
20	11.76	29.99	0.382	2.25
30	11.57	30.01	0.374	2.34
50	11.55	30.23	0.369	2.19
75	11.53	30.37	0.379	2.23
100	11.55	30.38	0.379	2.29
150	11.42	30.48	0.377	2.23
200	11.42	30.50	0.374	2.26
240	11.46	30.54	0.375	2.37
266	11.29	30.65	0.373	2.41
268	11.30	30.64	0.368	2.46
270	11.27	30.64	0.369	2.29
272	11.27	30.64	0.369	2.34

STA A-123    47° 44.4' N WEATHER c. 8 Oct 51    122° 25.4' W WIND N 4 1525 (+8)    DEPTH 155 fm 59° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (‰)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	12.82	30.10	0.451	2.17
10	12.52	30.26	0.443	2.09
20	12.26	30.00	0.417	2.04
30	12.07	30.39	0.383	2.28
50	11.50	30.66	0.352	2.17
75	11.50	30.68	0.346	2.32
100	11.42	30.73	0.351	2.29
150	11.15	30.86	0.344	2.64
200	11.06	30.87	0.347	2.72
240	10.98	30.86	0.344	2.49
275	11.04	30.90	0.341	2.67

STA A-125    47° 44.4' N WEATHER 61 29 Nov 51    122° 25.4' W WIND S 18 1542 (+8)    DEPTH 155 fm 50° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (‰)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	10.10	30.30	0.371	2.20
10	10.11	30.35	0.404	2.25
20	10.09	30.39	0.407	2.21
29	10.10	30.35	0.362	2.21
48	9.95	30.34	0.332	2.36
72	9.91	30.39	0.404	2.26
96	9.84	30.43	0.404	2.20
145	9.70	30.46	0.400	1.95
172	9.68	30.48	0.417	2.19
209	9.61	30.41	0.422	2.22
234	9.55	30.50	0.412	2.20

STA A-124    47° 44.4' N WEATHER c. 14 Nov 51    122° 25.4' W WIND S 3 1427 (+8)    DEPTH 155 fm 46° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (‰)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	10.14	30.08	0.430	2.58
10	10.10	30.37	0.452	2.73
20	10.06	30.34	0.419	2.69
30	10.71	30.33	0.446	2.71
50	10.75	30.32	0.459	2.72
75	10.75	30.44	0.413	2.71
100	10.73	30.44	0.425	2.55
150	10.76	30.46	0.442	2.66
196	10.50	30.46	0.445	2.67
235	10.38	30.59	0.452	2.65
265	10.14	30.64	0.463	2.70

STA A-126    47° 44.4' N WEATHER 0 27 Dec 51    122° 25.4' W WIND calm 1150 (+8)    DEPTH 155 fm 41° F Pt. Jefferson				
Depth (m)	Temp (°C)	Sal (‰)	O <sub>2</sub> (mg-at/L)	PO <sub>4</sub> (μg-at/L)
1	7.96	29.39	0.521	----
10	8.36	29.61	0.494	----
20	8.62	29.72	0.478	----
30	8.68	29.77	0.480	----
50	8.98	29.97	0.464	----
75	9.16	30.04	0.453	----
100	9.24	30.10	0.451	----
150	9.71	30.14	0.473	----
200	8.61	30.17	0.459	----
240	8.58	30.19	-----	----
270	8.48	30.19	0.474	----



Oceanographic Station Locations  
 ONCORHYNCHUS Station Nos. A-127 to A-137  
 11 January - 22 February 1952

STA A-127 47° 44.5' N WEATHER 63 11 Jan 52 122° 25.5' W WIND SE 4 1040 (+8) DEPTH 153 fm 39° F Pt. Jefferson			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	8.05	29.76	0.507
10	8.21	29.84	0.503
20	8.26	29.90	0.494
30	8.23	29.92	0.492
50	8.08	30.05	0.491
75	8.11	30.07	0.502
99	8.09	30.08	0.498
148	7.90	30.16	0.511
195	7.86	30.24	0.503
237	7.83	30.27	0.508
268	7.82	30.30	0.527

STA A-129 47° 45.5' N WEATHER b.c 13 Feb 52 122° 25.5' W WIND calm 1114 (+8) DEPTH 154 fm 42° F Pt. Jefferson			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
0	7.15	28.37	0.526
10	7.50	29.45	-----
20	7.50	29.63	0.522
30	7.50	29.65	0.570
50	7.46	29.70	0.547
75	7.45	29.79	0.540
100	7.48	29.88	0.542
150	7.48	29.92	0.542
205	7.49	30.03	0.542
245	7.52	30.03	0.543
275	7.52	30.03	0.538

STA A-128 47° 48.9' N WEATHER 53 11 Jan 52 122° 27.5' W WIND ESE 4 1505 (+8) DEPTH 105 fm 37° F Apple Cove Pt.			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
0	7.97	29.99	0.498
10	8.03	30.03	0.506
20	8.03	30.05	0.504
30	8.02	30.08	0.504
49	7.92	30.12	0.508
98	7.83	30.19	0.509
137	7.88	30.19	0.509
166	7.82	30.19	0.504

STA A-130 47° 35.5' N WEATHER c. 19 Feb 52 122° 58.1' W WIND NE 11 1045 (+8) DEPTH 94 fm 41° F Tekiu Pt.			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
0	6.26	28.06	-----
10	8.03	28.89	0.500
20	7.84	29.74	-----
29	7.85	29.94	-----
48	7.98	30.12	0.451
97	8.51	30.34	0.387
125	8.24	30.31	0.432
155	7.83	30.25	0.470

STA A-131    47° 23.5' N    WEATHER 71 19 Feb 52    123° 07.9' W    WIND ENE 13 1348 (+8)    DEPTH 60 fm    36° F Musqueti Pt.			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	5.99	17.51	0.923
10	8.51	28.92	0.466
20	9.04	30.02	0.366
30	9.10	30.25	0.344
50	9.03	30.35	0.319
75	8.77	30.36	0.343
100	8.64	30.34	0.363

STA A-133    47° 44.5' N    WEATHER b.c. 20 Feb 52    122° 50.2' W    WIND NNE 4 1450 (+8)    DEPTH 104 fm    41° F Tabook Pt.			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	6.45	26.98	0.868
10	7.93	29.63	0.503
20	7.81	29.88	0.497
30	7.86	29.95	0.478
50	8.04	30.10	0.454
100	8.21	30.26	0.419
140	7.83	30.23	0.469
180	7.63	30.26	0.489

STA A-132    47° 24.0' N    WEATHER 0 19 Feb 52    122° 55.7' W    WIND ENE 6 1610 (+8)    DEPTH 11 fm    42° F Lynch Cove			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	8.15	22.60	0.784
5	8.97	28.30	0.571
10	9.23	29.57	0.293
15	9.45	29.97	0.220

STA A-134    47° 42.2' N    WEATHER 0. 21 Feb 52    122° 45.6' W    WIND NE 13 1211 (+8)    DEPTH 74 fm    43° F Hazel Pt.			
Depth (m)	Temp (°C)	Sal (°/oo)	O <sub>2</sub> (mg-at/L)
1	6.88	28.19	0.678
10	7.36	29.34	0.579
20	7.49	29.71	0.545
30	7.58	29.88	0.518
50	7.85	30.11	0.484
75	8.02	30.17	0.457
100	8.07	30.17	0.448
125	8.05	30.19	0.452



STA A-135 47° 42.0' N WEATHER b. c.  
 22 Feb 52 122° 45.7' W WIND SE 3  
 0812 (+8) DEPTH 77 fm 37° F  
 Hazel Pt.

Depth (m)	Temp (°C)	Sal (‰)	O <sub>2</sub> (mg-at/L)
1	6.18	25.92	0.692
10	7.45	29.37	0.549
20	7.16	29.60	0.529
30	7.60	29.78	0.516
50	7.96	30.12	0.456
75	8.00	30.13	0.451
100	8.09	30.19	0.445
125	8.06	30.22	0.450

STA A-137 47° 56.2' N WEATHER b. c.  
 22 Feb 52 122° 38.1' W WIND SE 10  
 1038 (+8) DEPTH 70 fm 41° F  
 Tala Pt.

Depth (m)	Temp (°C)	Sal (‰)	O <sub>2</sub> (mg-at/L)
1	6.94	29.39	0.611
10	7.05	29.70	0.572
20	7.07	29.78	0.564
30	7.11	29.88	0.562
50	7.08	29.92	0.556
75	7.07	29.88	0.558
100	7.09	30.00	0.559
110	7.06	30.06	0.562

STA A-136 47° 49.4' N WEATHER b. c.  
 22 Feb 52 122° 40.4' W WIND SE 5  
 0920 (+8) DEPTH 37 fm 41° F  
 South Pt.

Depth (m)	Temp (°C)	Sal (‰)	O <sub>2</sub> (mg-at/L)
1	6.86	28.75	0.626
10	7.05	29.53	0.608
20	7.14	29.87	0.586
30	7.30	29.92	0.559
40	7.24	29.96	-----
60	7.34	29.25	0.537

# APPENDIX

## Results of Soluble-Silicate and Nitrite-Nitrogen Determinations

STATION A-34			STATION A-37		
Depth (m)	SiO <sub>2</sub> -Si (μg-at/L)	NO <sub>2</sub> -N (μg-at/L)	Depth (m)	SiO <sub>2</sub> -Si (μg-at/L)	NO <sub>2</sub> -N (μg-at/L)
1	25	0.34	1	28	0.22
10	20	0.39	10	26	0.24
25	20	0.46	24	28	0.15
50	20	0.57	48	28	0.00
75	36	0.41	72	32	0.11
100	30	0.41	97	28	0.00
150	30	0.17	145	28	0.00

STATION A-35			STATION A-38		
Depth (m)	SiO <sub>2</sub> -Si (μg-at/L)	NO <sub>2</sub> -N (μg-at/L)	Depth (m)	SiO <sub>2</sub> -Si (μg-at/L)	NO <sub>2</sub> -N (μg-at/L)
1	27	0.10	1	28	0.28
10	27	0.33	10	27	0.26
25	25	0.16	24	32	0.22
49	24	0.12	48	28	0.17
74	29	0.05	72	34	0.00
98	26	0.00	97	30	0.00
147	27	0.00	139	31	0.00
196	26	0.00	172	23	0.00
236	28	0.14			

STATION A-36			STATION A-39		
Depth (m)	SiO <sub>2</sub> -Si (μg-at/L)	NO <sub>2</sub> -N (μg-at/L)	Depth (m)	SiO <sub>2</sub> -Si (μg-at/L)	NO <sub>2</sub> -N (μg-at/L)
1	45	0.23	1	30	0.26
10	27	0.20	10	28	0.22
25	30	0.00	25	27	0.19
49	37	0.08	50	27	0.16
74	40	0.00	75	30	0.12
98	44	0.04	110	40	0.09
148	33	0.02			

## APPENDIX

Results of Soluble-Silicate and  
Nitrite-Nitrogen Determinations

STATION A-40			STATION A-43		
Depth (m)	SiO <sub>2</sub> -Si ( $\mu$ g-at/L)	NO <sub>2</sub> -N ( $\mu$ g-at/L)	Depth (m)	SiO <sub>2</sub> -Si ( $\mu$ g-at/L)	NO <sub>2</sub> -N ( $\mu$ g-at/L)
1	30	0.28	1	32	0.28
10	31	0.16	10	29	0.05
25	27	0.10	24	36	0.10
50	28	0.00	49	35	0.05
75	29	0.02	73	33	0.00
100	29	0.02	98	32	0.00
120	25	0.03	137	32	0.00

STATION A-41			STATION A-44		
Depth (m)	SiO <sub>2</sub> -Si ( $\mu$ g-at/L)	NO <sub>2</sub> -N ( $\mu$ g-at/L)	Depth (m)	SiO <sub>2</sub> -Si ( $\mu$ g-at/L)	NO <sub>2</sub> -N ( $\mu$ g-at/L)
1	30	0.20	1	33	0.02
10	27	0.28	10	33	0.11
25	28	0.38	24	33	0.06
49	26	0.23	49	30	0.13
74	26	0.03	73	42	0.05
98	26	0.00	103	35	0.00
138	29	0.00			
167	32	0.02			

STATION A-42			STATION A-45		
Depth (m)	SiO <sub>2</sub> -Si ( $\mu$ g-at/L)	NO <sub>2</sub> -N ( $\mu$ g-at/L)	Depth (m)	SiO <sub>2</sub> -Si ( $\mu$ g-at/L)	NO <sub>2</sub> -N ( $\mu$ g-at/L)
1	27	0.15	1	27	0.34
8	26	0.23	10	30	0.27
23	29	0.18	24	27	0.44
48	29	0.05	48	26	0.44
73	33	0.03	73	27	0.31
108	33	0.01	97	25	0.27
			123	32	0.41
			161	28	0.29

# APPENDIX

## Results of Soluble-Silicate and Nitrite-Nitrogen Determinations

STATION A-46			STATION A-49		
Depth (m)	SiO <sub>2</sub> -Si (μg-at/L)	NO <sub>2</sub> -N (μg-at/L)	Depth (m)	SiO <sub>2</sub> -Si (μg-at/L)	NO <sub>2</sub> -N (μg-at/L)
1	28	0.31	0	60	1.50
9	29	0.32	10	55	1.49
23	26	0.32	20	58	1.47
46	27	0.45			
70	26	0.44			
93	28	0.46			
130	27	0.41			
169	27	0.45			
207	29	0.34			

STATION A-47			STATION A-50		
Depth (m)	SiO <sub>2</sub> -Si (μg-at/L)	NO <sub>2</sub> -N (μg-at/L)	Depth (m)	SiO <sub>2</sub> -Si (μg-at/L)	NO <sub>2</sub> -N (μg-at/L)
1	44	1.36	1	49	1.64
10	44	1.23	10	47	1.56
25	47	1.09	20	55	1.43
50	52	1.00	30	57	1.98
75	45	1.22	50	61	1.59
100	48	0.88			
130	48	1.06			
160	46	1.11			

STATION A-48			STATION A-51		
Depth (m)	SiO <sub>2</sub> -Si (μg-at/L)	NO <sub>2</sub> -N (μg-at/L)	Depth (m)	SiO <sub>2</sub> -Si (μg-at/L)	NO <sub>2</sub> -N (μg-at/L)
1	48	1.76	1	71	0.84
10	49	1.53	10	79	1.33
25	41	1.08	20	79	1.15
50	48	1.19	30	74	0.77

# APPENDIX

## Results of Soluble-Silicate and Nitrite-Nitrogen Determinations

STATION A-52			STATION A-54		
Depth (m)	SiO <sub>2</sub> -Si (μg-at/L)	NO <sub>2</sub> -N (μg-at/L)	Depth (m)	SiO <sub>2</sub> -Si (μg-at/L)	NO <sub>2</sub> -N (μg-at/L)
1	99	0.77	1	90	0.51
5	83	0.79	10	73	0.16
10	57	0.43	25	57	0.38
18	61	0.50	50	60	0.05
			75	83	0.34
			100	81	0.31

STATION A-53			STATION A-55		
Depth (m)	SiO <sub>2</sub> -Si (μg-at/L)	NO <sub>2</sub> -N (μg-at/L)	Depth (m)	SiO <sub>2</sub> -Si (μg-at/L)	NO <sub>2</sub> -N (μg-at/L)
1	61	0.62	1	73	0.36
10	61	0.77	10	65	0.50
25	50	0.24	25	49	0.40
50	51	0.29	50	59	0.30
75	35	0.23	75	65	0.48
100	44	0.16	110	62	0.30
140	52	0.27			
180	67	0.12			

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